USMA Cadets Study Decontamination

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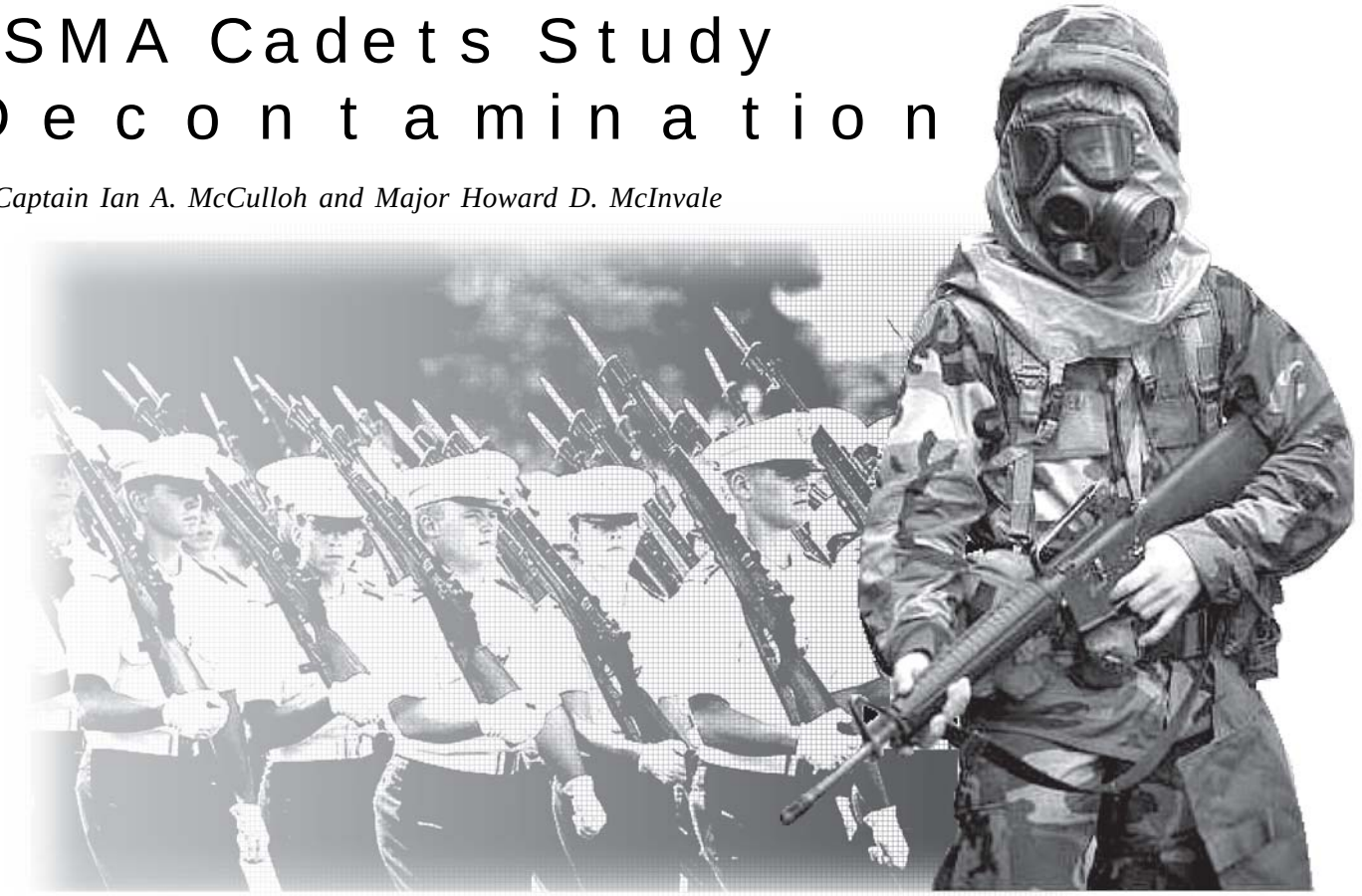

What do West Point cadets know about decontamination? The US Military Academy (USMA) Class of 2007 recently investigated how to optimally allocate manpower and other resources to conduct a thorough decontamination mission. This study was conducted as part of a course in probability and statistics, the fourth and final core mathematics course at the USMA. The mathematics program at USMA empowers students to solve real and ill-defined problems. This course project on decontamination highlighted the ability of the cadets to go beyond the traditional problems seen in most textbooks and apply problem-solving concepts to a practical and meaningful issue.

The project assigned decontamination augmentees to different detailed equipment decontamination (DED) stations. Because the thorough decontamination process is time- and resource-intensive and extremely difficult to execute on a large scale, simulation offered valuable insight on improving the process. The core mathematics program at USMA makes extensive use of technology in its curriculum, and that technology was applied to the decontamination problem. With the use of mathematics software, students at the undergraduate level can now develop solutions that were once possible only at the graduate and professional levels.

Nearly 800 sophomore cadets, divided into teams of two or three, tackled this problem. The teams' solutions involved fitting statistical distributions with data collected by the US Army Test and Evaluation Command (ATEC) and using Monte Carlo simulation to model the thorough decontamination process. Cadet teams, creative in their strategies, recommended effective plans to significantly reduce the overall time to decontaminate vehicles and equipment. This wide variety of solutions was evidence of the high-caliber quality of this student population.

For most soldiers, mission-oriented protective posture (MOPP) and chemical, biological, radiological, and nuclear (CBRN) training is hot, miserable, and something they want to avoid. However, after this project, an entire group of future West Point graduates may view MOPP and CBRN training in a more positive light. As first impressions go, these future leaders may view the Chemical Corps as a more relevant, technical, and exciting branch.

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